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OBJECTS: The furtherance of the study of the various branches of Natural History and the preservation of our heritage of indigenous flora and fauna.

MEETINGS: Second Tuesday of each month at 8pm at the Cairns Education Centre, Greenslopes Street, Edgehill, Cairns.

FIELD DAYS: Sunday before meeting.

CLUB OFFICERS:

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HON. TREASURER
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— MR. TED BILL
— MRS. DAWN MAGARRY
— MRS. DERNA ELSDON
— MS. ELEANOR DUIGNAN

SUBSCRIPTIONS: (Due September 30th)

CITY AND SUBURBAN MEMBERS..... \$15.00
COUNTRY MEMBERS & PENSIONERS... \$10.00
FAMILY MEMBERSHIP..... \$20.00



NOTES FROM THE EDITOR

BY: E.J. DUIGNAN

It is almost impossible to believe that Christmas is upon us once again. What's the saying - time flies, money flies and blow flies! (Diptera calliphoridae). Upon reflection, we certainly have had a most interesting year highlighted by the camp at the Genazzano Centre where extraordinary attempts were made at canoeing. For those who like good food (prepared by someone else) I think the camp at Peter Pal's Mt Molloy would have to take the cake! Georgetown at Easter would have to be my personal favourite - the longer the camp - the more to enjoy. Great interest was also taken in our display at the Botanical Gardens for the annual festival. The monthly meetings proved most rewarding with guest speakers talking on various subjects of both flora and fauna.

We look forward to seeing both old and new members in the coming year. Our programme for the first half of '94 will be completed before Christmas.

Response to the request for articles for the bi-annual journal has been enormous. However, we still like to see those articles coming in. If you have or know of anyone with an item of interest please allow us to share your experience.

**** Merry Christmas and Happy New Year to each and everyone. ****

SUBSCRIPTIONS: Allow me to draw your attention to today's date. Subscriptions were due at the 1st of September. Have you paid yours? Don't forget - no subscriptions - no journal and I'd be very upset at the thought of your missing an issue as there are some very interesting features on the board. If you're unsure please check with Dawn Magarry to see if your name is on or off the mailing list.

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SHE DOESN'T KNOW THE DIFFERENCE

BY: J. HASENPUSH - P.O. BOX 26 INNISFAIL. Q. 4860

ORNITHOPTERA PRIAMUS EUPHORION (Gray) 1852, commonly known as the Cairns Birdwing is Australia's largest butterfly and one of the most spectacular. Originally protected due to a common misconception that collectors had added to their demise, it is therefore now recognised that the single most destructive force threatening this species is destruction of habitat including the native vines on which it breeds, namely Aristolochia tagala and Aristolochia deltantha.

These vines are toxic and help in the survival of these insects, not only as a food plant but larva and adults retain this toxicity throughout their life span. This makes them unpalatable to many predators.

Often bought at nurseries are species of Exotic Aristolochia vines commonly known as the Dutchman's Pipe. These vines are usually grown for their spectacular flowers and the belief that they are Birdwing foodplants. The native Aristolochia's have mainly small and insignificant flowers when compared with many of their exotic counterparts.

Aristolochia elegans is one of these exotic species which is detrimental to the Birdwing's survival. Unfortunately, the female butterfly cannot differentiate between native and exotic vines and will lay her ova on these exotic species. The ova hatch and the young larva will feed for several days before dropping to the ground, dead.

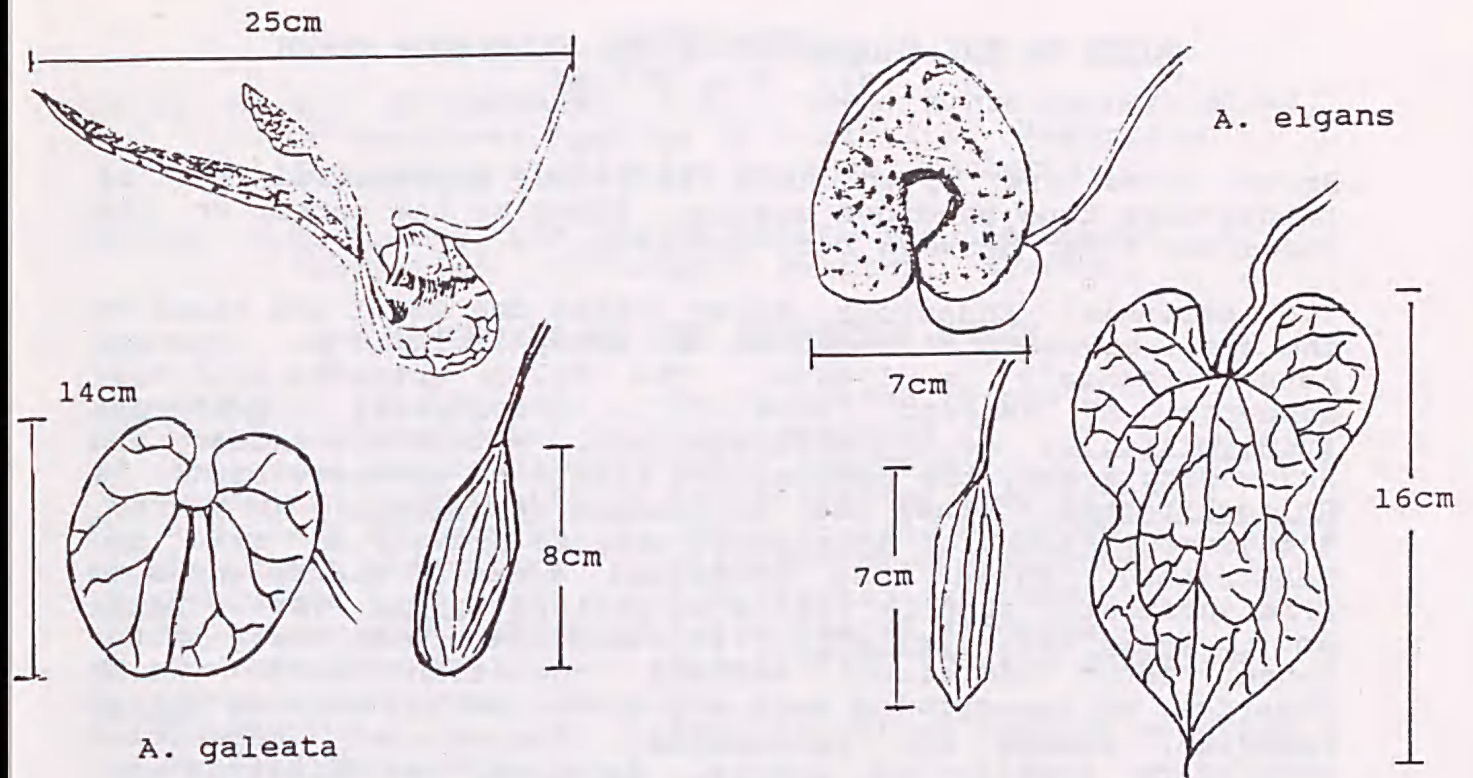
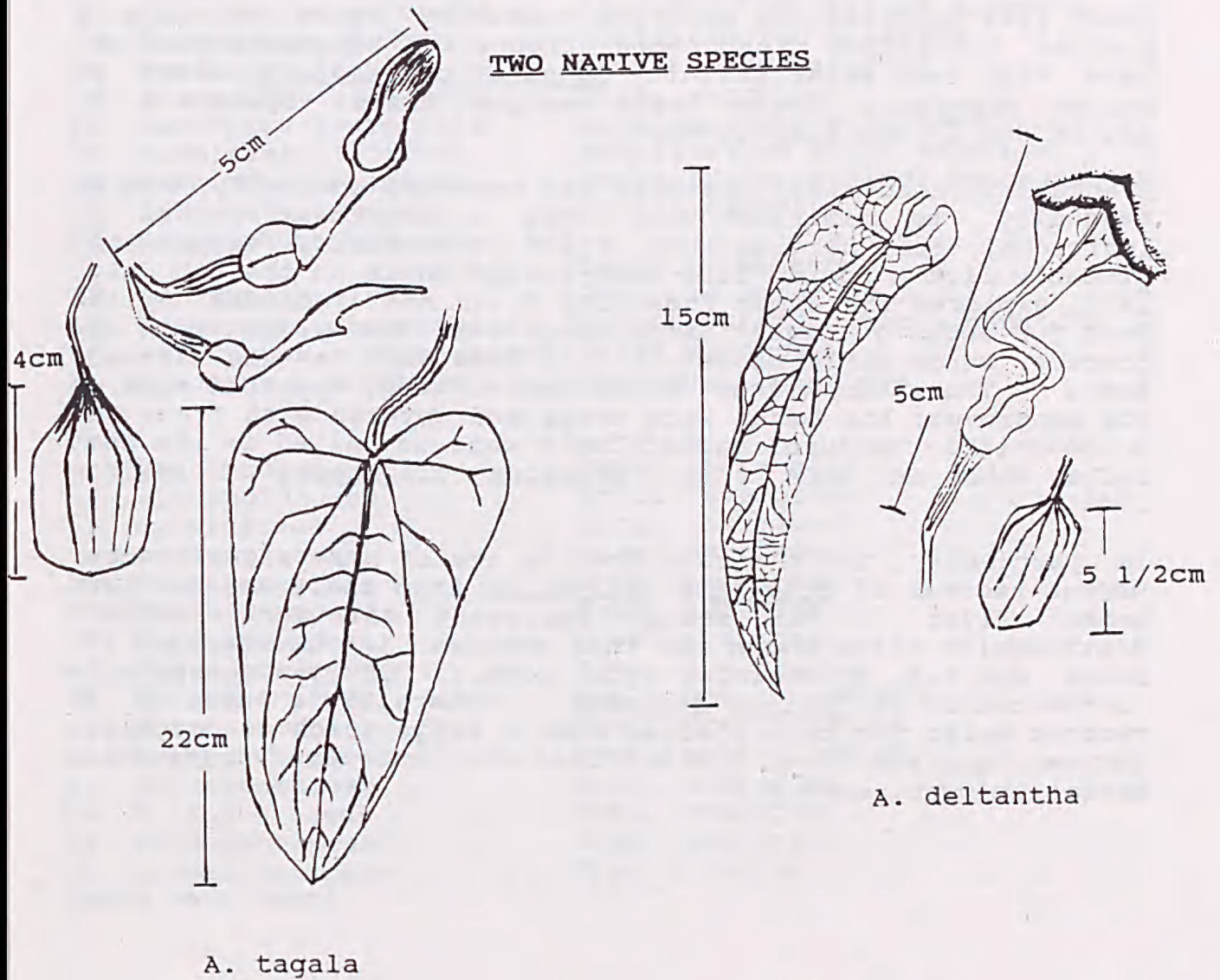
These vines should be correctly identified and if not native they should be pulled up and correctly disposed of.

A threat to the Birdwing is an infestation of Aristolochia elegans half way along Reed Road, Trinity Beach, where an explosion of this vine covers a large area of vacant private property covered in scrub.

More people should be encouraged to grow the native Aristolochias which would help the local Birdwing population to breed up in numbers so that once again these magnificent insects can be seen flying around our local gardens as they once used to.

Anyone wishing to help re-establish native Aristolochia tagala vines may write to the author for seed and planting instructions. Please include a stamped, s/addressed envelope.



TWO EXOTIC SPECIESTWO NATIVE SPECIES

NOTES ON THE MANGROVES OF THE ENDEAVOUR RIVER

BY: J.A. MCLEAN

Brief notes are given here with an accompanied list of twenty-five true mangrove species, found by the author at the Endeavour River between 1983 and 1993.

The perennial Endeavour River enters the Coral Sea close to the small township of Cooktown, 15 28'S, 145 15'E. Average annual rainfall is 1784mm. The river entrance typically supports a seaward zone of principally Avicennia eucalyptifolia, on the southern bank. Within the estuary and proceeding areas, the predominant family of mangrove found is Rhizophoraceae, other than Sonneratia caseolaris. In places, homogeneous stands of Rhizophora stylosa prevail in soft mud substrates. While less inundated areas of higher and more firm substrates support stands of Ceriops tagal var. tagal and C. tagal var. australis. In association with these latter zones, often additional wetland vegetation exist which comprise of low-growing herb and grass genera, such as Batis, Sesuvium, Sueada and Sporobolus. Terrestrial vegetation consisting usually of Acacia, Eucalypt and Melaleuca spp. mainly border such Ceriops zones.

About 12km upstream the mangrove community start to make a gradual transition into more freshwater dependent species. Here, with less water salinity Sonneratia caseolaris start to become apparent, some as large emergent trees. Species 1, 6, 13, 15 and 17 are also present.

Eventually, about 18km upstream the mangrove community begins gradually to diminish with only intermittent stands or individual trees merging into thick terrestrial vegetation, probably little spoilt from when Joseph Banks on the 6th July, 1770, explored the upper Endeavour River and recorded - 'We went for about 3 leagues among mangroves: then we got into the country, which differed very little from what we had already seen. The river higher up contracted much, and lost more of its mangroves; the banks were steep and covered with trees of a beautiful verdure, particularly what is called in the West Indies mohoe or bark tree (Hibiscus tiliaceus)'. (Maiden 1909).

In particular, two mangrove species are of some significance. Recent records of Bruguiera cylindrica from the Endeavour (and Annan River - 7km south) represent the most southern distribution sites known for this species in Queensland (R. Busby and P.B. Bridgewater pers. comm.). Of less consequence is the record of Ceriops decandra. Generally a paucity of records exist for this species over a large track of coastline between Daintree River and Princess Charlotte Bay (Queensland Herbarium pers. comm.).

(continued over)

REFERENCES

BUSBY, R. and BRIDGEWATER, P.B. (1986). A Preliminary Atlas Of Mangroves Species In Australia. Australian Government Publishing Service, Canberra.

MAIDEN, J.H. (1909). Sir Joseph banks: The 'Father Of Australia'. Government Printer, Sydney.

MANGROVES OF THE ENDEAVOUR RIVER

1	<i>Acanthus ilicifolius</i>	Holly-leaved mangrove	U
2	<i>Aegialitis annulata</i>	Club mangrove	C
3	<i>Aegiceras corniculatum</i>	River mangrove	C
4	<i>Avicennia eucalyptifolia</i>	Smooth-barked grey mangrove	C
5	<i>Bruguiera cylindrica</i>	Small-fruited mangrove	R
6	<i>Bruguiera parviflora</i>	Slender-fruited mangrove	U
7	<i>Bruguiera exaristata</i>	Rib-fruited mangrove	U
8	<i>Bruguiera gymnorhiza</i>	Large-leaved mangrove	C
9	<i>Ceriops decandra</i>	Rib-fruited spurred mangrove	R
10	<i>Ceriops tagal</i> var. <i>Australis</i>	Smooth-fruited spurred mangrove	U
11	<i>Ceriops tagal</i> var. <i>tagal</i>	Long-fruited spurred mangrove	C
12	<i>Rhizophora apiculata</i>	Tall-stilted mangrove	C
13	<i>Rhizophora mucronata</i>	Long-fruited stilted mangrove	U
14	<i>Rhizophora stylosa</i>	Small-stilted mangrove	C
15	<i>Cynometra iripa</i>	Wrinkle-pod mangrove	U
16	<i>Excoecaria agallocha</i>	Milky mangrove	C
17	<i>Heritiera littoralis</i>	Looking-glass mangrove	C
18	<i>Lumnitzera littorea</i>	Red-flowered black mangrove	U
19	<i>Lumnitzera racemosa</i>	White-flowered black mangrove	C
20	<i>Osbornea octodonta</i>	Myrtle mangrove	C
21	<i>Scyphiphora hydrophyl</i> -acea	Yamstick mangrove	U
22	<i>Sonneratia alba</i>	Pornupan mangrove	C
23	<i>Sonneratia caseolaris</i>	Red-flowered pornupan mangrove	C
24	<i>Xylocarpus australasicus</i>	Cedar Mangrove	U
25	<i>Xylocarpus granatum</i>	Cannonball mangrove	U

1	Acanthaceae	Shrub, perennial
2	Plumbaginaceae	Shrub, evergreen
3	Myrsinaceae	Shrub, evergreen
4	Avicenniaceae	Tree, evergreen
5	Rhizophoraceae	Tree, evergreen
6	Rhizophoraceae	Tree, evergreen
7	Rhizophoraceae	Tree, evergreen
8	Rhizophoraceae	Tree, evergreen
9	Rhizophoraceae	Small tree or shrub
10	Rhizophoraceae	Small tree or shrub
11	Rhizophoraceae	Small tree or shrub
12	Rhizophoraceae	Tree, evergreen
13	Rhizophoraceae	Tree, evergreen
14	Rhizophoraceae	Tree, evergreen
15	Caesalpiniaceae	Tree or shrub

16	Euphorbiaceae	Tree, deciduous
17	Sterculiaceae	Tree, evergreen
18	Combretaceae	Small tree or shrub
19	Combretaceae	Small tree or shrub
20	Myrtaceae	Shrub, evergreen
21	Rubiaceae	Shrub, evergreen
22	Sonneratiaceae	Tree, evergreen
23	Sonneratiaceae	Tree, evergreen
24	Meliaceae	Tree, deciduous
25	Meliaceae	Tree, usually evergreen

IN MEMORIAM - BILL AND AGNES FELTON

Long time members of the North Queensland Naturalist Club were doubly saddened this year at the loss of both Bill and Agnes (Fellie) Felton. Bill was treasurer for many years supported by Agnes as a Committee member, until ill health forced their retirement.

The Feltons lived in the City Caravan park where Bill took many sick and injured birds under his wing, nursing them back to health before returning them to the wild. Both Bill and Agnes were made life members of the 'Nats' Club in recognition of their many years of support. They'll be sorely missed.

BREAKFAST AT THE LAKES

On a recent morning walk at Centenary Lakes I spied among the garden mulch a Crinoline fungus or Stinkhorn (*Dictyophora indusiata*). Nothing unusual in this as they are quite common. What made this particularly interesting were the three medium size cane toads (*Bufo marinus*) sitting round the base of the fungus and leaping up to catch the blowflies as they landed on the smelly tip.

Crinoline fungus
Green-eyed frog
(*Litoria eucnemis*)



OUR COVER: Imbedded in the bark of the branch on which the Little Kingfisher (*Ceyx puscilla*) has alighted is this issue artist's name 'Noela Dell'. Noela, a NQNC member, comes from Gordonvale and is in the throws of completing illustrations for a book by one of our feature's author, Lloyd Neilsen of Julatten. Best wishes to you both.

DIETS AND DENS

by: DR NICKY GOUDBERG

DEPARTMENT OF ENVIRONMENT AND HERITAGE.

The rainforest ringtail possums are primarily leaf eaters, with an occasional snack of flowers and fruits on the side. Leaves however, are a difficult food source; not all are edible.

As leaves are the plant's solar cells, essential to its survival, plants protect their leaves from insect and animal predators. Common protection methods involve making the leaves poisonous, non nutritious and/or tough. To counter these protection strategies, animals have become very selective in choosing their leafy meals and have also cultivated some useful friends... gut microbes.

The only organisms able to digest plant fibre are special microbes found in the stomachs of all animals which eat plants, from termites to humans. Micro organisms can also break down the poisons found in leaves, but this can be an energy expensive process. These useful types of microbes are so important to possums that they have provided a special home for them, the caecum. The human appendix is the equivalent of the caecum. However, while the human appendix is small (we don't rely on plant fibre to survive), the possum's caecum is large reflecting its vegetarian diet.

Recent research has found that not only are possums very selective in what they eat, their behaviour closely reflects the energy available in their diet. Lumuroid ringtails choose leaves low in fibre such as the young leaves of Queensland maple (*Flindersia brayleyana*) and (*Sloanea langii*). As they use less energy to digest their food they have more time to spend. This species is the most energetic of the ringtail possums, leaping between trees and returning to a fixed den at the end of the night's activity. Dens are holes in trees shared with their mate and maybe last years juvenile. In contrast to the lemuroid possum, the green possum is the sloth of the rainforest. Its diet consists of tough and poisonous fig leaves, the leaves of some laurels and even those of the shining stinger! Such a diet is low in energy, but easy to find as there a few other animals wanting to feed on such poor quality food. Green possums, therefore, do not have to search far to find food. As they are very low energy animals, green possums save energy by curling up where they finish at the end of the night. For this reason green possums do not have a fixed den, but change their den sight nightly, dependant on the location of their last meal.

Herbert River ringtails feed on regrowth species such as sarsparilla (*Alphitonia petriei*) and quondongs (*Ellaeocarpus* spp.). Their energy intake falls somewhere between that of the green and the lemuroid ringtails, and so is their den requirement. Herbies will return to dens if they are close to where they end up after the night's activities. They will

often camp in tree hollows or epiphytes. However, Herbies do not waste energy and seem to prefer to den in nearby epiphytic ferns rather than moving very far.

It is interesting to see the link between diet and behaviour - even to the point of influencing the fur coloration of the green ringtail, so it is less obvious when curled asleep on an open branch.

SPOTLIGHTING FOR POSSUMS

As possums are nocturnal animals, the most reliable method to find them at night is to look for their eyeshine with a spotlight. Eyeshine is caused by a membrane at the back of the eye called a 'tapetum'. This membrane reflects light back through the eye a second time to enhance night vision. The more reflected light, that is the brighter the eyeshine, the better the animal can see at night. Thus our dull red eyeshine seen in flash photos reveals that our night vision is inferior to that of the cat, with its bright white glare.

As with cats and people, rainforest possums have different coloured eyeshine depending on the species. With practice the colours and brightness can be used to identify the different species: lemuroid ringtails have a pink/yellow eyeshine; green possums a dimmer red eyeshine and brushtails and striped possums have a pinkish eyeshine. Sometimes the colours appear a bit different if the animals are not looking straight at you or if they are juveniles, so use the eyeshine as a guide.

Spotlighting can cause distress to animals if it is not done thoughtfully. Night adapted eyes are very light sensitive so avoid 100watt spotlights. Although eyeshine can be picked up with a small torch, to view the animal a 30watt spotlight is a good size. Always place the spotlight directly in front of your face so you can look along the beam. If you are not positioned behind the beam you often miss spotting the animal. Once an animal has been located and identified, swing a red filter over the white light. Although this dims the light a little, possums are far less disturbed by the red light and will continue their activities while you watch. Their reactions to white light can vary from prolonged grooming, a sign of nervousness, to moving away completely. Usually animals become less light tolerant as the evening progresses. A cheap and effective red filter can be made using a single layer of red cellophane.

While looking for animals try to remain quiet as it is often sounds of activity which guide you to an animal. Likewise, keep quiet while watching an animal. Repeated thoughtless disturbance will scare animals away from an area and make spotlighting more difficult for everyone. To get the best view - use your binoculars as they work very well at night in conjunction with a spotlight.

TINAROO REPORT - SEPT/OCT 1993
BY: BEN CONSTABLE - YUNGABURRA

The record low water level in Tinaroo Dam has transformed the arm of the lake where our house is situated from a maximum width of 400 metres when the dam is full, to a trickling rivulet down the old creek bed that can be jumped over. Consequently the large flocks of ducks and geese that normally use this area as a base during the winter months have this year deserted us, and it's only in recent weeks these have appeared in any numbers down stream at Tinaburra.

There the reach, once so popular with water skiers is now studded with the remains of long drowned trees while at the junction of Wrights Creek there is a maze of islands and projecting spits of land devoid any vegetation but which provides comfortable resting sights for the Plumed Whistling-ducks of which there were over 2000 at the last count, interspersed with some 700 Magpie Geese. Grey Teal, Wood and Pacific Black Ducks are plentiful with several pairs of Hardheads, and after a long absence a few Cotton Pygmy-geese. There have been a few waders seen, but on October 7th, a rare visitor from the coast, an Eastern Curlew was seen feeding on the shore line not far from three Golden Plovers and a Marsh Sandpiper.

The mowing of the overgrown vacant block next to us in early September provided an entertaining incident when the body of a Bandicoot (killed by the slasher) attracted the attention of a mixed flock of Fork-tailed (Black) and Whistling Kites. These in turn aroused the curiosity of a passing White-Breasted Sea-eagle that made no bones about its intentions and dived through the circling scavengers to snatch up the carcass and carry it off, hotly pursued by several Kites. Instead of heading for the horizon as I expected, the Eagle began climbing in wide circles which, as there were no thermals to assist, must have been extremely hard work, loaded down as it was, with its large prey and being forced to continually take evasive action to avoid the three most persistent of the Kites that repeatedly 'buzzed' the larger bird. It must have taken nearly ten minutes for the Eagle to attain a height that I estimated was well over 2000 metres where it was able to take advantage of the fast flowing air stream on which it sailed effortlessly in the direction of Nardello's Lagoon some 20 km away, where at the time, was a well developed and doubtless hungry Eaglet waiting in the nest.



NOTES ON THE VEGETATION OF SECTION 'C' - CAIRNS CENTRAL SWAMP
BY: R. JAGO

This section is bounded by Charles, Severin, and Grove Streets and the Fearnley Street drain.

Some 139 species of vascular plants occur within this section. Of these, 112 species could be said to be native to the area where as the remaining 27 species are introduced exotics. A native species Calophyllum inophyllum occurs only as seedlings and probably owe there existance to nearby cultivated specimens.

This section at first glance appears somewhat unattractive and uninteresting as it has been greatly degraded by salt water intrusion over a number of years. Quite large areas have been colonized by mangroves and other plants associated with the marine ecosystem. All that remains of the original vegetation are the still standing trunks of dead trees. Many large trees that still survive in this section show signs of salt water poisoning and will without doubt succumb to this salt poisoning within a short period of time if nothing is done to control the salt water intrusion.

This section once must have supported a very diverse and interesting flora, as what remains is still surprisingly diverse. Some 31 species of native plants occur in this section that have not been recorded for either section 'A' or section 'B'. (Ref. Jnl 194 and 195) This further demonstrates the variability of these remnant isolates of native vegetation.

Some 27 species of exotic plants have established themselves in this section. Some could still be considered garden escapees, but most are truly naturalized. The most troublesome is without doubt Annona glabra. At present is is confined to a narrow strip between the area effected by salt water intrusion and what is left of the native vegetation. The construction of flood gates to control salt water intrusion into this section will cause an explosion in the population of this species. Urgent action should be taken to exterminate this pest before it becomes impossible. It is, I believe, the most serious and troublesome of all the many exotic plants that have been introduced into these parts of North Queensland. It has the potential to take over all areas of freshwater wetlands within the Cairns City, Douglas, Mulgrave and Johnstone Shires if no action is taken to control it.

It would be most unwise to stop salt water intrusion into this section of the swamp before the Annona glabra is exterminated. This section could well serve as a testing ground as to removal methods. Local Councils, The Department of Environment and Heritage as well as the Wet Tropics Management Authority could and should combine their resources and have a long hard look at the threat posed by this species to our

wetlands and, at the very least, fund some research into the problem.

If Annona glabra cannot be exterminated in a small confined area, such as this section of the Central Swamp, it would be a waste of resources to try on a more grand scale.

PRELIMINARY CHECK LIST OF VASCULAR PLANT SPECIES NATIVE TO
SECTION 'C' OF THE 'CAIRNS CENTRAL SWAMP'

Pteridophytes (Ferns)

Acrostichum speciosum	Mangrove fern	C
Asplenium nidus	Crows nest fern	U
Pyrrosia longifolia		C
Stenochlaena	Climbing swamp fern	C

Angiosperms (flowering plants)

Dicotyledons

Acacia crassicarpa	Brown wattle	C
Acacia mangium	Sally wattle	C
Acacia polystachya		C
Aegiceras corniculatum	River mangrove	C
Alphitonia excelsa	Red ash	C
Alstonia scholaris	Milky pine	U
Alyxia spicata	Climbing chain fruit	C
Antidesma bunius	Herbert River cherry	R
Avicennia eucalyptifolia	Grey mangrove	C
Beilschmiedia obtusifolia	Blush walnut	U
Brachychiton acerifolius	Flame tree	U
Breynia cernua	Stinking leaf tree	C
Brucea javanica		C
Brugiera gymnorhiza	Mangrove	C
Buchanania arborescens	Satinwood	C
Calophyllum inophyllum	Alexandrian laurel	U
Canthium coprosmoides		C
Cassine melanocarpa		C
Cassytha filiformis	Devils twine	C
Cayratia maritima	Native grape	C
Ceriops tagal		C
Chionanthus ramiflorus	Native olive	C
Clerodendrum cunninghamii		C
Cryptocarya hypospodia	Northern Laurel	C
Cryptocarya triplinervis	Brown Laurel	C
var riparia		
Cynanchum carnosum		U
Cynometra ramiflora	Wrinkle pod mangrove	C
Dillenia alata	Red beech	C
Diospyros ? compacta		U
Dischidia nummularia	Button orchid	C
Elaeocarpus grandis	Silver quondong	U
Euroschinus falcata	Ribbonwood	C
Excoecaria agallocha	Milky mangrove	C

<i>Ficus benjamina</i>	Weeping fig	C
<i>Ficus congesta</i>	Red leaf fig	C
<i>Ficus variegata</i>	Variegated cluster fig	C
<i>Ficus virens</i>	Fig	C
<i>Glochidion harveyanum</i>	Buttonwood	C
<i>Glochidion philippicum</i>	Buttonwood	C
<i>Gmelina dalrympleana</i>	Grey Teak	C
<i>Guioa acutifolia</i>		C
<i>Gymnanthera nitida</i>		C
<i>Hibiscus tiliaceus</i>	Cottonwood	C
<i>Hoya australis</i> s.sp. <i>tenuipes</i>	Hoya	U
<i>Ichnocarpus frutescens</i>		U
<i>Ipomoea triloba</i>		U
<i>Jagera pseudorhus</i>		C
<i>Jasminum aemulum</i>		C
<i>Litsea breviumbellata</i>		U
<i>Lophostemon suaveolens</i>	Swamp mahogany	C
<i>Limnitzeria racemosa</i>	Black Mangrove	C
<i>Macaranga involucrata</i>		C
var <i>mallotoides</i>		
<i>Macaranga polyadenia</i>		C
<i>Macaranga tanarius</i>	Blush macaranga	C
<i>Maclura cochinchinensis</i>	Cockspur thorn	U
<i>Mallotus philippensis</i>	Kamala	C
<i>Mallotus polyadenos</i>	Kamala	C
<i>Melaleuca dealbata</i>	Tea tree	U
<i>Melaleuca leucadendra</i>	Tea tree	C
<i>Melaleuca quinquenervia</i>	Tea tree	C
<i>Melia azedarach</i>	White cedar	C
var <i>australasica</i>		
<i>Melicope elleryana</i>	Evodia	C
<i>Memecylon hylandii</i>		U
<i>Michocarpus lachnocarpus</i>		C
<i>Myrmecodia beccarii</i>	Ant plant	U
<i>Myristica insipida</i>	Nutmeg	C
<i>Omalanthus novo-guineensis</i>	Native bleeding heart	C
<i>Pisonia aculeata</i>		U
<i>Planchonella chartacea</i>	Dugulla	C
<i>Polyalthia nitidissima</i>	Canary beech	C
<i>Polyscias australiana</i>	Ivory basswood	C
<i>Pongamia pinnata</i>	Pongamia	C
<i>Portulaca pilosa</i>		U
<i>Prema obtusifolia</i>		C
<i>Randia fitzalanii</i>	Brown gardenia	C
<i>Rhamnella vitiensis</i>		C
<i>Schefflera actinophylla</i>	Umbrella tree	C
<i>Sesuvium portulacastrum</i>	Sea purslane	C
<i>Stephania japonica</i>	Tape vine	C
<i>Suaeda australis</i>	Seablite	C
<i>Syzygium angophoroides</i>		C
<i>Syzygium tierneyanum</i>	Greek satinash	C
<i>Tabernaemontana orientalis</i>		C
<i>Terminalia catappa</i>	Sea almond	U
<i>Terminalia muelleri</i>	Little sea almond	C
<i>Terminalia sericocarpa</i>	Damson	C
<i>Timonius timon</i>		C

Tylophora sp.?		U
Vandasina retusa	Native wistaria	C

Monocotyledons

Alpinia caerulea	Native ginger	C
Archontophoenix alexandrae	Alexandra palm	C
Commelina? cyanea	Wandering dew	C
Cordyline manners-suttoniae		C
Cyperus javanicus	Glaucous sedge	C
Dendrobium canaliculatum	Tree tree orchid	R
Dianella bambusifolia		C
Dioscorea bulbifera	Cheeky yam	C
Eustrephus latifolius	Wombat berry	C
Flagellaria indica	Supplejack	C
Hypolytrum nemorum		C
Imperata cylindrica	Blady grass	C
Oplismenus compositus	Creeping beard grass	C
Pandanus solmslaubachii	Pandanus palm	C
Phragmites karka	Reed grass	C
Scleria polycarpa		C
Smilax australis	Sarsaparilla vine	C
Sporobolus sp.?		U
Sporobolus virginicus	Salt water couch	C

PRELIMINARY CHECK LIST OF INTRODUCED PLANT SPECIES SECTION 'C'
OF THE 'CAIRNS CENTRAL SWAMP

Dicotyledons

Alternanthera dentata		C
Annona glabra	Aligator apple	C
Ardisia humilis		C
Catharanthus roseus	Periwinkle	C
Centrosema pubescens	Centro	C
Ixora coccinea	Scarlet ixora	U
Lantana camara	Lantana	C
Mangifera indica	Mango	C
Passiflora suberosa		C
Psidium guajava	Guava	C
Rivina humilis	Coral berry	C
Senna obtusifolia	Sickle pod	C
Solanum torvum	Devils fig	C
Synedrella nordiflora	Cinderella weed	C
Thrysacanthus stricta	Red flowered justicia	C
Triumfetta rhomboidea	Chinese burr	C
Urena lobata	Pink burr	C

Monocotyledons

Aregastrum romanzoffianum	Queen palm	C
Dracaena cannaefolia		C
Epipremnum aureum	Devils ivy	C
Melinis minutiflora	Molasses grass	U
Panicum maximum	Guinea grass	C
Ravenala madagascariensis	Travellers palm	C
Rhynchelytrum repens	Red natal grass	C

Sansevieria trifasciata
 Syngonium podophyllum
 Zebrina pendula

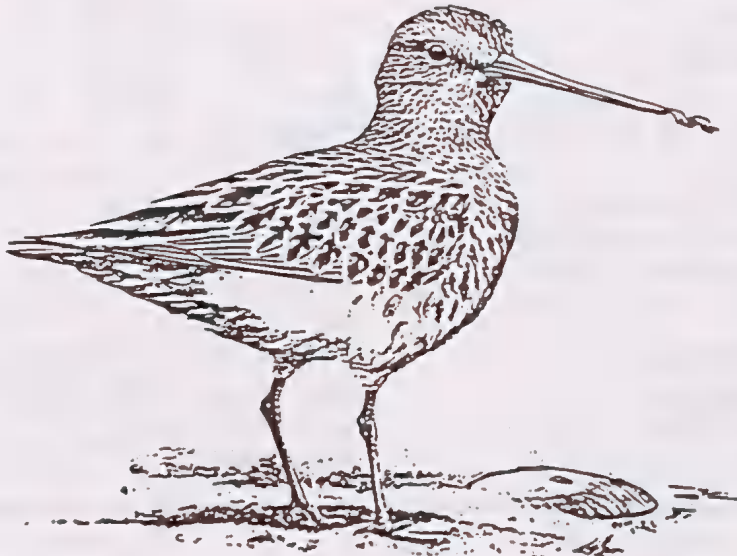
Mother-in-law's tongue C
 Arrow head plant C
 Wandering jew C

For notes and check lists on Sections 'A' and 'B' please refer to our previous Journals No. 194 and 195 respectively.

DRILL-BILLED MUSSEL SUCKER
 (Screwbeakus Vacuumus)

At close range, the spiral grooves on the bill of this rare shore bird are sufficient to provide a positive identification. Feeding is accomplished by inserting the bill into the mud until it encounters a mussel and then walking in clockwise circles to drill the bill tip through the shell. The mussel is sucked out, and the bird rapidly walks anti-clockwise to free himself. During feeding frenzies, individuals occasionally begin drilling at such a rate that the entire head will disappear beneath the mud. They are easily identifiable in flight as the birds tend to spiral when flying into a strong headwind. The Drill-billed Mussel Sucker's song is seldom heard, but some reports indicate a high pitch buzzing.

OBSERVATION HINT: Flocks of Drill-billed Mussel Suckers are often found spiraling over muddy areas of the 'Great Barrier Reef'. Best results have been obtained by anchoring your boat on the reef's outskirts between January and May of any year.



THE NORTHERN BETTONG - AN ENDANGERED ENDEMIC
OF FAR NORTH QUEENSLAND

For many years our knowledge of Australia's Northern Bettong (Bettongia tropica) was based upon nine skins and skulls, collected earlier this century, and held in overseas museums. The first was collected by Carl Lumholtz in January, 1884 at the Coommooboolaroo Station in the Dawson Valley west of Rockhampton. All others were from the Wet Tropics region; three obtained by C.M. Hoy 'nine miles south of Ravenshoe' in May, 1922 and three by P.J. Darlington from Mt. Spurgeon in July, 1932.

Until recently the Northern Bettong was considered to be merely a race of the Brush-tailed Bettong (Bettongia penicillata) from the extreme south of the continent. However, the taxonomist N.A. Wakefield gave it its own species status in 1967 when he revised the genus using one of Darlington's specimens as the type for the species. This specimen has been returned to Australia and is located in the Victorian Museum.

Reports of its preferred habitat range from rainforest to eucalypt woodland. Recent surveys have only found it in wet and dry sclerophyll woodland communities on decomposed granite soils and occasionally in the ecotone where rainforest species provide an understory to sclerophyll species.

After the initial collections and description, awareness of the species dwindled. The Northern Bettong became a 'forgotten' species until it was rediscovered at Lamb Range by Peter Johnston and Mark Weaver of the North Queensland National Parks and Wildlife Service in 1976.

The next reported sighting was on the Mt. Winsor Tableland by John Glazebrook followed by additional reports from the same area by other people, including a male caught by Rupert Russell in 1982 and held in captivity in the Queensland National parks and Wildlife Service's macropod colony in Townsville. The creek along which these records were obtained is now known as Bettong Creek on the Queensland Forest Service maps.

In 1988/89 the World Wildlife Fund commissioned Dr. John Winter to investigate the species because of the concern over the low incidence of observation and recording. This led to a series of field surveys culminating in three reports that confirmed the presence of the animal at two distinctly separate localities but absent from the species type locality.

After the three 'Winter' expeditions, and fearing the worst for the Mt. Spurgeon population, a series of surveys of the species was initiated, funded jointly with the Wet Tropics Management Agency and the Queensland Department of Environment and Heritage in an attempt to identify all the populations of

the Northern Bettong. The surveys started at the type locality and are working southwards investigating any suitable habitat areas.

On the first of these surveys, and what was to become quite an adventurous expedition, Dr. John Grant and Mr. Lyal Naylor were rewarded by being able to confirm the continued survival of the species at its type locality on Mt. Spurgeon.

The surveys have established the presence of three populations to date and will continue this year concentrating on localities closer to Ravenshoe - the site of the collections by Raven and Hoy.

The Northern Bettong was probably never an abundant species, but having only identified three small isolated populations is a concern. Only an extremely small fragment of one of these populations is inside National park, although portions of all these populations are within the Wet Tropics World Heritage Area.

Despite the above, the Northern Bettong has survived mining operations, logging activities and cattle grazing. However, the worst may be yet to come. Over the last year recordings of the occurrence of introduced foxes in close proximity to our known populations have increased. The fox has impacted heavily on a number of similar sized macropods in the south of Australia.

The Northern Bettong is seen as the highest conservation priority of any mammal species in Far North Queensland. Research focus on the species is now gaining momentum with a number of institutions such as the Wet Tropics Management Agency, James Cook University, Australian Nature Conservation Agency and the Queensland Department of Environment and Heritage are now involved.

An example of this new focus is the current work of Allen McIlwee of James Cook who is carrying out studies on the comparative diets of the Rufous Bettong and the Northern Bettong. Further work on the species will probably concentrate on four areas; surveys for new populations, monitoring the fox numbers, research into the habitat requirements and life history, and finally the establishment of one or more captive populations.

Daren Storch

WILDLIFE SECTION.

Queensland Department of Environment and Heritage.
CAIRNS.

Thanks to Dr. John Winter for the additional material and help with this article.

KINGFISHER PARK - WHERE INTERNATIONAL BIRDWATCHERS MEET
 BY: LLOYD NIELSEN

One of the most attractive areas for birdwatchers is the region of north-eastern Queensland commonly referred to as the Wet Tropics, a tiny area stretching from Cooktown to Townsville. From this relatively small strip, approximately 430 bird species have been recorded, almost 60% of Australia's birds. In addition, it contains the largest number of species endemic to any area of Australia - birds such as the Golden and Tooth-billed Bowerbirds, Chowchilla, Victoria's Riflebird, Lesser Sooty Owl and the challenging Atherton Scrubwren. This is another reason why birdwatchers are always eager to visit this part of Australia.

Kingfisher Park is located amidst this tropical paradise, only a little over an hour's drive from Cairns, and has become a mecca for International and Australian birdwatchers alike. Run by Geoff and Sandra Nicholson, it caters exclusively for birdwatchers. When staying at Kingfisher Park one knows that other guests share similar interests which result in many stimulating and fulfilling discussions taking place.

Kingfisher Park's fame began some years ago when it was rumoured merely as a caravan park. Birdwatchers on an overnight stay sighted a Red-necked Crake at a small pond. It was soon realised that the Crake came fairly regularly to this pond and before long other birdwatchers were calling to try to spot this elusive rainforest bird. When Geoff and Sandra realised the property's potential for birdwatching, they purchased Kingfisher Park and steered it on its rightful course.

Kingfisher Park is situated at 450 metres altitude in tropical rainforest, thus having the advantage of harbouring most of lowland species as well as some of those from higher altitudes. The Bridled Honeyeater, Grey-headed Robin, Tooth-billed Bowerbird, Bower's Shrike-thrush, Lewin's Honeyeater and others drift down to these lower altitudes in winter. In all, birdlife is prolific about the Park and one can easily spend a day or two wandering about searching out some of the more elusive rainforest species. One of the highlights of the year is the arrival from Papua New Guinea of the spectacular Buff-breasted Paradise Kingfisher, usually about early November. Several pairs breed in terrestrial termite mounds in the rainforest making it an easy species to see over the next five months. During spring and summer Metallic Starlings which set up a small nesting colony just outside the Park come to the feeders, allowing a close-up view of these magnificent birds.

One of the more recent occurrences has been the successful nesting of a pair of Lesser Sooty Owls which initially saw two young leave the nest, but with one only being raised. For many nights a parent was seen passing a freshly killed rat (*Rattus* and *Melomys*) to a begging youngster, often high in a rainforest tree but usually in an open area in the canopy.

where excellent views of this small, beautiful but very elusive rainforest owl could be had.

Other owls breed close by the Park, pairs of both Barn and Barking Owls successfully raising young in most years. In fact, nocturnal birds in the greater area are richly represented. Spotlighting excursions have produced some special birds, notably Masked, Grass and Rufous Owls, as well as the three species of Nightjars and also the Australian Owlet-nightjar. Strangely, the Southern Boobook is one of the least common owls, especially the common widespread form which is rarely seen in the surrounding open forest. However, the smaller and darker rainforest form, endemic to the Wet Tropics area, and which may yet prove to be a distinct species, is not uncommon at high altitudes. Many spotlighting excursions conducted from Kingfisher Park are successful in that some of the nocturnal species are sighted most nights, though for some unknown reason, an occasional night can be very unproductive, but then - such is birdwatching!

A major contributing factor to the richness of species in this region of northern Queensland is the diversity of habitats, all of them represented in fairly close proximity to Kingfisher Park. For example, only 10km to the west, annual rainfall drops dramatically and dry tropical woodland becomes the dominant vegetation. It is here that the Black-throated finch, Squatter Pigeon, Australian Bustard, Great Bowerbird and others can be seen. Some common inland species such as Australian Kestrel, Galah, Apostlebird, Red-backed Kingfisher and Crested Pigeon just reach this region. The Square-tailed Kite is a rare inhabitant of this dry woodland.

There are several areas of wetlands close by with a good variety of aquatic species, sometimes with birds such as Green Pygmy Goose and less occasionally Cotton Pygmy Goose. Occasionally some of the Asiatic waders occur at and near these lakes and swamps - Marsh and Wood Sandpipers, Little Curlews, and rarely Oriental Plovers.

The Daintree River to the north provides an excellent habitat for some of the more sought after birds. The Great-billed Heron, Little and Collared Kingfishers are notable species, not forgetting the Mangrove Robin.

Most birdwatchers who visit Kingfisher Park also allow time for an excursion to the Cairns Esplanade, one of the more famous wader spots where some 'firsts' for Australia have been made.

Today, a map of the world at Kingfisher Park displays pins from many countries. Thus, this tropical sanctuary has firmly established itself as an important destination on every birdwatchers' and Naturalists' itinerary.

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